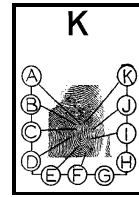


ILLUSTRATING IMPRESSION COMPARISONS



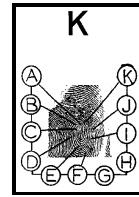
OBJECTIVE:

Given written material; photographic or electronic images of crime scene impressions and the matching known impressions; computer facilities and the necessary software; at the end of the session the student will make an illustration of an impression comparison suitable for presentation in court to the extent that;

- the images are sharply focused and of suitable contrast
- the images are enlarged to the same size
- the images are oriented similarly
- the chosen features correspond on both photographs
- indicator lines are placed so that they clearly emphasise the corresponding features
- the overall appearance and layout of the illustration is neat and easily understood by a person with no training in comparison of impressions

as evaluated by the facilitator.

ILLUSTRATING IMPRESSION COMPARISONS



INTRODUCTION

In this module you will learn to produce illustrations with which you will demonstrate, in court, how you formed your opinion of the common origin of a crime scene impression and a known impression.

You will:

- select a suitable size of illustration for a courtroom presentation
- select a format which best accommodates the comparison which you are illustrating
- enlarge the images to exactly the same degree
- orient the illustrations similarly
- select appropriate features for demonstration of the similarities of the impressions
- lay out indicator lines for a simple and neat appearance

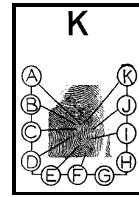
NOTE:

While at the Ontario Police College you will be using conventional film to initially record the images and the film will be commercially processed but not printed. You will then scan the film into your computer and use computer images printed on a colour printer to make the pictures required for your court illustration.

In another presentation you will learn to produce finished illustrations directly on the computer using Adobe Photoshop.

In the current session you will use the computer printouts as if they were photographic enlargements. This alternative method gives those who do not have access to Adobe or a similar program the opportunity to make illustrations for court purposes using a method similar to that which they will be using in their home service.

ILLUSTRATING IMPRESSION COMPARISONS



WHY YOU SHOULD MAKE AN ILLUSTRATION

In the individualization process the final step is presenting your findings in court. How this should be done has been the subject of discussion among identification officers for many years. Some have argued that it is not necessary to present illustrations and that such evidence can simply be given orally. Others insist that presenting the illustrations actually strengthens their testimony since it allows the court to more easily understand how the opinion was reached. (The word 'Chart' is often used as a synonym for illustration.)

Before tackling the 'how' of illustrating, therefore, we will explore the arguments surrounding the 'why'.

A research memorandum from the Law Library on University Avenue in Toronto, on the subject of fingerprint evidence, made the following observation:

"In many instances police officers are reluctant to use the chart, believing it invites a line of cross-examination that would not otherwise be thought of by defence counsel. But, without it, it may be argued that there would be no foundation for the officer's statement of opinion. This may invite a motion for non-suit if the only evidence is the mere opinion of the fingerprint officer."

Two old Canadian cases which considered this question reinforce the point.

In *De'Georgio and Servello*, [1934] W.W.R. 374 (B.C. Co. Ct.) the judge stated:

"...I do not believe any jury would be justified in arriving at a conclusion of guilt upon opinion evidence wherein no satisfactory reasons for the opinion were given."

In *Wishwell*, [1935] 63 C.C.C. 95 (N.S.S.C.), in which opinion evidence given without any foundation to support the conclusions was rejected, the court stated:

"...Identification by fingerprints is at best opinion evidence based I think on expert knowledge and expert practice and with due respect I cannot find that this basis has been adequately established."

Earl Levy, a prominent defence attorney, in his book "Examination of Witnesses in Criminal Cases" discusses this question from the point of view of presenting expert evidence to support the defence case. He states:

"A better understanding of the evidence with a significant impact upon the jury can be achieved when the expert provides demonstrative evidence such as enlarged maps, graphs, plans, photographs, models, movies, etc., which should be entered as exhibits."

And, to further support the argument for production of these exhibits, but from the viewpoint of defence attacking the Crown's case, the Law Library research memorandum went on to state:

"...by blocking the admission of a chart as an exhibit, the defence is removing a key link in the chain of evidence in the hope that the jury will forget the spoken word of the expert."

A case from London, Ontario illustrates the above contention.

A member of the maintenance staff at the Ontario Police College was a jury member on a case involving a sexual assault. The prosecution did not introduce a fingerprint chart, but had the identification officer give the evidence verbally. Despite much other evidence in the case the jury acquitted the accused. Later, when discussing the experience, the staff member realised that during their deliberations the jury had totally forgotten the fingerprint evidence. Naturally, the defence was delighted!

Even when fingerprint evidence is discussed during jury deliberations it may not be fully understood. As a result, with nothing to refer to except their memory of verbal testimony, the evidence may not be given the full weight it deserves.

In *Davie v Magistrates of Edinburgh (1953)* Lord Cooper made the following statement about the role of the expert witness:

"...their duty is to furnish the judge or jury with the necessary scientific criteria for testing the accuracy of their conclusions so as to enable the judge or jury to form their own independent judgement by the application of these criteria to the facts proved in evidence."

In considering *R v Abbey, [1982] 68 C.C.C. 2nd 394 at p.412* the Supreme Court of Canada commented on the testimony of a medical doctor who had given evidence as an expert. They stated that

".....before any weight can be given to an experts' opinion the facts upon which the opinion is based must be found to exist."

The court concluded that the party tendering the evidence has the obligation of establishing, through properly admissible evidence, the factual basis on which such opinions are based.

These decisions are exactly contrary to the view of some identification officers who suggest that, because they have the training and experience to form the opinion, the court should accept their word, virtually without question. They claim that to allow the jury to second guess the opinion of the expert by providing illustrations, which can be examined first hand, not only introduces the possibility of mis-interpretation but is also an insult to the integrity of the expert.

What these officers seem to have overlooked is that it is incumbent upon the court to determine the acceptability of the evidence of every witness. It is up to the witness, especially one who is designated an expert by the court, to provide the means by which the court can make that assessment.

These latter two cases do not refer specifically to identification evidence but the statements by the judges do, however, apply to all persons giving expert testimony. The decisions clearly establish that it is your duty to educate the court as to the principles which you, and any other competent identification officer, follow in forming an opinion. This is the only way in which the court can determine that your opinion is more than a mere guess.

Any instructor would agree that the use of visual aids is of great importance when attempting to deliver information to students in a short time. Since, in effect, you become an instructor, and generally only have a very short time to teach the court, visual aids

such as illustrations, photographs and diagrams obviously become essential.

Would there ever be a time when you would give the evidence even though you had no illustration?

It may be, on very rare occasions, that a crime scene impression will not photograph sufficiently well for a non-expert to make any sense of it. If you then decide to introduce your evidence without an illustration it will be up to you to explain why. You must then make certain to present your opinion with sufficient explanation that the court will have no difficulty in understanding how you reached your conclusion.

In this situation it may even be worthwhile to make up a dummy illustration and, after a very careful explanation that it does not represent the actual comparison in the case, use it to illustrate generally how a comparison is made. You should, of course, discuss this possibility with your Crown prosecutor before the trial.

It must be stressed that this will be a very rare situation. Usually, if you can see the impression you can photograph it. It may require a great deal of experimenting with lighting and filtration but is well worth the effort in terms of the impact it will make on your testimony in court.

MAKING THE ILLUSTRATION.

In this section we will examine some of the factors that you should consider if the illustrations are to have their maximum impact. There is no standard format required by the courts, the actual appearance

is left up to you, unless your own identification unit has specific instructions.

MOUNTING BOARD

Material

Select a good quality, heavy weight board that will be stiff enough to stand up without curling and that will accept ink. Although you may choose not to use ink in preparation of the illustration it is not unusual for notations to be made directly onto it while in court. It looks better if the ink does not bleed into the board.

Colour

White gives good contrast for lettering or writing and has a 'scientific' look.

Size

The sole purpose of the illustration is to enable you to demonstrate for the court how you formed the opinion to which you are testifying. It makes no sense, therefore, to present an illustration which cannot be seen by the jury members. You can probably recall, as a student, the frustration of having an instructor refer to a visual aid which you could not see. Keep that in mind as you prepare yours. Do not make it too small.

To choose an appropriate size you must assess the situation in your own courtrooms.

Consider the following questions. How far away will the jury members be? Will they be able to see what you are pointing at or describing? Imagine yourself at the same distance from an instructor and ask whether, as a student, you would be able to learn from that visual aid. Thinking of having to write a test based on the presentation of that

illustration will give you an understanding of its suitability.

The ideal would be to have an illustration large enough so that the jury can easily see even the small details to which you will be referring as you stand in the witness box.

The first limitation on producing illustrations of this size is that you may not have the equipment to make enlargements of that size, especially when dealing with fingerprints.

Even if you do have the equipment, many negatives will simply not allow enlargements of this magnitude without becoming meaningless patches of differing shades of grey.

An illustration this size would probably also be impossible to hold conveniently for reference as you testify. This may mean that the illustration must be placed on an easel which would then require you to be out of the witness box to describe it.

Although a good suggestion from a teaching standpoint, illustrations of this size may be inconvenient to carry around and to store. Some officers use an artists portfolio case (like an oversized thin briefcase) for this purpose. The illustration can often be cut in half and hinged so that it can be folded for transporting.

If your courtroom is suitably equipped you might consider producing your illustrations in the form of slides or overhead transparencies.

Another suggestion is to make a reasonable sized illustration and then stand in front of the jury box to make the presentation. Even then the jurors at extreme ends of the jury box may have difficulty in seeing well because of the angle. In addition the defence

counsel and/or the judge may object since they would not be able to see what you are doing without also standing in front of the jury.

Perhaps the best alternative is to make an illustration of a size which will be easy to carry and store without being damaged and then provide photocopies (or extra computer prints) for the jury members. They will then be able to follow along on their own copies as you explain. You will have to check with the court in your own jurisdiction before planning to do this.

Copies should, of course, also be available to the defence, the prosecutor and the judge.

PAPER QUALITY

Use semi-gloss or matte paper when making photographic prints for your illustration. Glare from high gloss paper tends to obscure detail for the viewer which, of course, defeats the whole purpose of the illustration.

DEGREE OF ENLARGEMENT

Crime scene impressions are often very faint, or of poor contrast, with confusing backgrounds. When photographing them at the crime scene it may not be possible to provide the optimum lighting conditions that would produce the highest quality negatives.

When these negatives are then subjected to extreme enlargement it can sometimes become very difficult, if not impossible, for an inexperienced person to differentiate the impression from background interference.

By restricting the enlargement size it may be possible to provide adequate clarity for an untrained eye to discern the detail that you will be describing. This limitation will

therefore affect your ability to produce the huge illustrations described earlier.

A five to six diameter enlargement over life size for fingerprints will usually give an image approximately four and a half to five inches square. At this degree of enlargement you should be able to produce an illustration without the detail tending to disappear into the background.

This size will be too small to be seen by the jury if you remain in the witness box but would be satisfactory if you can make photocopies or extra computer prints for the jurors.

Other types of impressions may be enlarged to a greater or lesser degree, depending on the quality and size of the original. A footwear impression, for instance, may be used at life size (1:1) if it is the whole footwear impression, or enlarged if it is only the heel or a portion of the sole. The tip of a screwdriver blade may need to be enlarged ten times or more over life size.

Whatever degree of enlargement is used, the images of both the crime scene impression and the known impression must be enlarged to the same size even though the original negatives may have different sized images. To be able to accomplish this requires that a scale must be included in each image so that they can later be brought to the same size. It can be placed at one side of the frame so that it can be cropped out when producing the illustration

USE THE ENTIRE CRIME SCENE IMPRESSION

Whenever possible, use the entire crime scene impression on your illustration. This will avoid the suggestion that you only used

the portion that matched and left out any areas that did not.

If it is not practical to use the whole impression, as would be likely with tire tracks for instance, you should introduce photographs which show the complete impression with an outline indicating the area used for the illustration. You should also be prepared to explain why you did not use the whole impression.

CONTRAST

Many identification officers, particularly when illustrating fingerprints, tend to try to produce the same contrast in the scenes of crime enlargement that appears in the inked or test impression i.e., heavy black ridges.

When the original crime scene impression is weak, or lacks contrast, attempting to increase contrast in photographic printing or in the computer can often lead to loss of some of the fainter grey tones, and thus some of the detail, in the enlargement.

The reason is that as the contrast is increased many of the intermediate shades of grey are compressed. Some of the lighter shades of grey then drop out and become white while darker grey shades become black. In extreme cases this could result in loss of detail and consequent inability to illustrate the similarities of the two impressions. Enlarging the impression bigger than life size exacerbates the problem.

When photographing, and especially when printing the enlargements, you must attempt to capture as much of the tonal gradation of the original that the medium will permit. This may result in the enlargement of the crime scene impression having a different

tonal appearance from that of the inked impression.

This is easily explained in court, especially when the original is an impression in dust, dirt or a light coloured development technique and the known is an inked impression.

PHOTOGRAPHIC PRINTS

Whenever possible, the image on the photographic print of the known object or impression should have a similar overall shape to that of the crime scene impression. With fingerprints, for example, you could use the plain inked impressions, rather than the rolled impressions, because they are closer in shape to fingerprints found at crime scenes.

Do not, however, cut or mask either impression to force them into a similar shape because this gives the illustration a contrived look.

TEST IMPRESSIONS

When making an illustration of a finger or palmprint comparison it is preferable that you take the inked impressions of the subject yourself. You can then ensure that the particular area that you need for the comparison is properly and clearly taken.

This is especially important when you are working with friction ridge areas that are not usually recorded, such as the extreme tip of a digit, the second phalange, or the side of a palm. Having taken the impressions yourself also reduces the number of witnesses required in court.

With other types of comparisons you will be most likely to be making the test impressions yourself so you will have control of their quality.

LAYOUT OF THE ILLUSTRATION

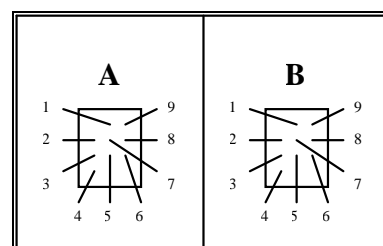
There is no standard requirement for the layout of a comparison illustration.

Keep in mind, however, what it is that you are trying to accomplish, i.e., to demonstrate to the court how you formed your opinion and arrived at your conclusion.

The more complex your illustration, the more involved will be your explanation and the more difficulty the jury will have in understanding your testimony. It is also likely to provide more room for cross-examination.

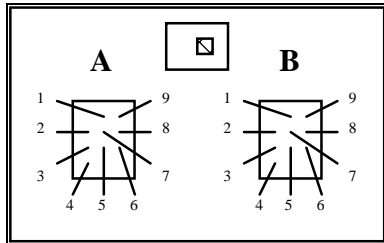
The following descriptions and illustrations will give you some ideas for suitable layouts. Do not restrict yourself to these suggestions if you feel that you can make the illustration simpler or more meaningful using another format.

a. Side-by-side layout.



In the most commonly used format, a photograph of the crime scene impression is mounted side by side with a photograph of the known impression and identifying features common to both are emphasised by means of indicator lines.

b. Side-by-side with reduced size overall view.

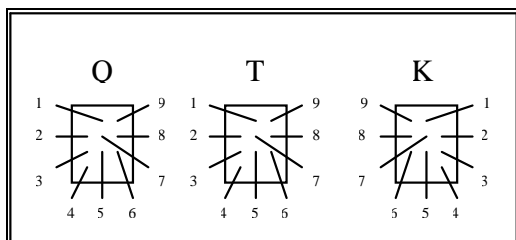


Sometimes it is preferable not to use the whole impression, such as when dealing with tire tracks, footwear and palm prints. It is common in such instances to include a third photograph, showing the whole impression, on which the area used during the comparison is outlined. The degree of enlargement of this third photograph will be much less than that of the crime scene and comparison impressions.

c. Side-by-side, three part illustration.

Making a comparison between a two-dimensional crime scene impression and a three-dimensional original is very difficult. e.g., comparing a footwear impression from the scene and the actual footwear that is suspected of making it.

It is preferable, in this situation, to make a test impression of the footwear and then compare the two impressions.



In such cases it may be useful to mount photographs of the two impressions and the

actual exhibit, all at the same degree of magnification

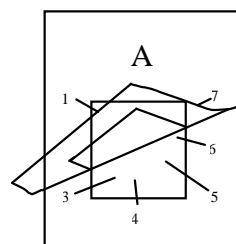
The two impressions will be laterally oriented the same way but the photograph of the original will be the opposite way. This is because you are, in effect, looking down on the impressions from above but looking up at the footwear or tire, etc., from below.

In the above sketch Q and T (for questioned and test) are oriented the same way because they are both impressions. K (for known) is a photograph, at the same scale, of the bottom of the footwear.

Having the third photograph should make it easier to explain why the impression is laterally reversed from the original shoe or tire. You can easily demonstrate by using the actual footwear and the photograph of the impression.

d. Overlay.

Note: The overlay method will only be a convincing demonstration when the matching areas of the two impressions are the same size and shape and therefore fit exactly one on top of the other.



In this method a photographic or computer print is made of one of the impressions and a transparent overlay made of the other.

They are then displayed with the transparent overlay placed precisely over the photograph/computer print and hinged so that it can be lifted out of the way.

Fingerprints often are not suitable for the overlay method of illustration because of the distortion introduced by pressure in different directions when the impressions were being made. This is often the case with fingerprints from a crime scene and the rolled inked impressions taken after the arrest.

You can prove it for yourself by rolling an inked impression side to side in the normal way and then taking another impression while rolling the same finger lengthways from the first joint to the tip. If you then try to place one over the other you will find that the ridge details do not align exactly.

There can be no doubt that the impressions were made by the same finger but an overlay may not be very convincing to inexperienced jury members.

The same difficulty can be present in other types of impressions. If the two impressions are not close to the same size and shape because of distortion at the time one or other of them was made, be very cautious about using the overlay format.

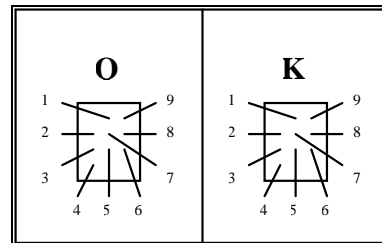
When everything does line up it is an excellent method of illustration. When they do not line up you are inviting a very stiff cross examination and perhaps a lessening of the weight given to your evidence.

Choose an alternate method of illustrating your comparison in these situations.

e. Left-right placement of photographs of unknown and known.

As you learned in the session on Search and Comparison, the proper procedure is to analyse the unknown crime scene

impression before you ever look at the known or test impression.



Since we read from left to right it is thus most appropriate to place the photograph of the unknown (or questioned) crime scene impression on the left of the illustration and the photograph of the known (or test) impression on the right.

This will help you to describe the process correctly, and when the jury examines the illustration, the tendency then is for them also to follow the correct order of examination. As you will learn in the session on The Expert Witness, even small details such as this can affect the weight given to your evidence.

INDICATING FEATURES OR POINTS OF INTEREST.

It is important to remember that the illustration is not, of itself, evidence. It is only a way to help you to describe how you made your comparison and formed the opinion to which you are testifying. It need contain only sufficient information to be able to provide a demonstration of that process. The question of the number of 'points' has been discussed elsewhere in the course. Here we are concerned only with how to prepare the illustration.

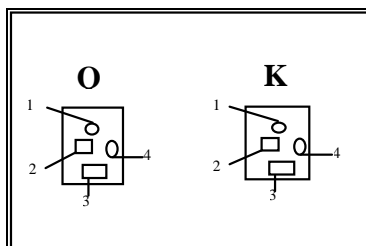
For many years it has been the custom to draw attention to individual features found in the impression by drawing lines to them

and labelling the lines with letters or numbers. (see diagram on previous page)
The correspondence between the two impressions was then shown by the same lettered (or numbered) lines pointing to similar features on both impressions.

With finger and palmprints, these features have traditionally been the ridge details such as ridge endings, bifurcations, short ridges, enclosures etc. With footwear, tires and tools the features indicated are usually irregularly shaped nicks, cuts, gouges and other marks caused during everyday use of the object.

More recently the method has been to outline areas and to draw the attention of the court to the various features found in those areas and then show how they correspond on both diagrams.

This permits you to concentrate on the shape of the features and the relationship of one to another rather than merely the number of features or 'points' as has traditionally been done.



Because of distortion in one or both impressions you may find that some features are not in the same position relative to the edges of the photographic print. Try to avoid using these features if possible since they will give your illustration an inexact appearance and will require some

explanation, either before or after a sharp-eyed defence counsel notices the fact! The features are, of course, in the same positions relative to each other, the distortion merely causes the actual measurements between them to change somewhat.

Guidelines for selection and placement of indicator lines.

- they must not cross each other
- when indicating a feature on a fingerprint impression the line should approach the feature at right angles when possible
- indicator lines should stop just short of the feature, not on the feature
- indicator lines should not cross or obscure any other significant features
- for the neatest appearance indicator lines should terminate in regular spacing around the outside edges of the photographs
- corresponding lines on the two photocopies should appear to run parallel to each other

SUMMARY

- you have a duty to the court to explain how you formed your opinion
- the illustration is a teaching tool that will help you to carry out that duty
- it should be laid out simply and clearly
- consider how well the jury will be able to follow the small detail to which you will be referring
- neatness counts, it must look 'scientific' and 'professional' (however you define those terms!).